

REMARKS/ARGUMENTS

Claims 1-17 are pending in the present application, of which claims 1 and 11 are independent. Claims 1-17 are amended.

OBJECTION TO THE SPECIFICATION

On pages 2-3, the Office Action objects to the Abstract for exceeding the 150 word limit and for reciting "means." In response, Applicant hereby amends the Abstract to reduce its length to below 150 words and to remove all recitations of "means." Accordingly, Applicant respectfully requests that the objection to the Abstract be withdrawn.

CLAIM OBJECTIONS

On pages 3-4, the Office Action objects to claims 1, 3, 9, 11, 12, and 14-16. Applicant respectfully traverses these objections.

Regarding claim 1, the Office Action alleges that there is insufficient antecedent basis for "the storage device" on line 11. In response, Applicant hereby replaces "storage" with -- control -- so that line 2 provides a proper antecedent. The Office Action further alleges that there is insufficient antecedent basis for "the data" on line 11. In response, Applicant changes "the" to -- external --.

Regarding claim 3, the Office Action alleges that there is insufficient antecedent basis for "the same physical path" on line 4. In response, Applicant hereby changes "the same" to -- a single --.

Regarding claim 9, the Office Action alleges that there is insufficient antecedent basis for "the data" on line 3. In response, Applicant changes "the" to -- the external --, thereby establishing support in line 11 of claim 1.

Regarding claim 11, the Office Action objects to the use of "a round key generation means" and "at least one round key generation means." In response, all claims now recite a -- round key generator --.

Regarding claim 12, the Office Action suggests changing "with" to -- and -- on line 2. Applicant hereby adopts the Examiner's suggestion.

Regarding claim 14, the Office Action alleges that there is insufficient antecedent basis for "the memory" on line 2. In response, Applicant hereby deletes this subject matter from claim 14.

Regarding claim 15, the Office Action objects to the use of both "a round key generation means" and "at least one round key generation means." In response, all claims now recite a -- round key generator --.

Regarding claim 16, the Office Action objects to the use of both "a round key generation means" and "at least one round key generation means." In response, all claims now recite a -- round key generator --.

Having addressed all of the objections above, Applicant respectfully requests withdrawal of the objections to claims 1, 3, 9, 11, 12, and 14-16.

REJECTIONS UNDER 35 U.S.C. § 112, ¶2

On pages 4-5, the Office Action rejects claims 1 and 4 under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. Applicant respectfully traverses this rejection for the reasons detailed below.

Regarding claim 1, the Office Action alleges that the identity of the “key generation means” is unclear. In response, all claims now recite a -- round key generator --.

Regarding claim 4, the Office Action alleges that it is unclear whether the at least one round key is temporarily stored in the memory of the control device. In response, claim 4 now recites that “the at least one round key is temporarily stored in the memory of the control device.”

Having addressed both claims above, Applicant respectfully requests withdrawal of the rejections of claims 1 and 4 under 35 U.S.C. § 112, second paragraph.

REJECTIONS UNDER 35 U.S.C. § 103

On pages 5-11, the Office Action rejects claims 1, 4, 8-9, 11, and 15-16 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,261,003 to Matsui (hereinafter “Matsui”) in view of U.S. Patent Application No. 2002/0021802 to Muratani (hereinafter “Muritani”). On pages 12-15, the Office Action rejects claims 2-3, 6-7, and 12-13 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsui in view of Muritani, further in view of the Hennessy et al. book (hereinafter “Hennessy”). On pages 15-16, the Office Action rejects claims 5 and 14 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsui in view of Muritani, further in view of U.S. Patent 5,919,251 to Tran (hereinafter “Tran”). On page 16, the Office Action rejects claims 10 and 17 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsui in view of Muritani, further in view of U.S. Patent Application No. 2003/0202658 to Verbauwheide (hereinafter “Verbauwheide”). Applicant respectfully traverses these rejections.

Independent claim 1 now recites, in part, the following subject matter: “the control device transmits intermediate results to the round key generator to perform recursive calculation of the at least one round key” (emphasis added). Independent claim 11 contains a similar recitation. This subject matter finds support in the specification in, for example, paragraph [0032].

Applicant respectfully submits that the references of record do not disclose, suggest, or teach this subject matter. Neither Matsui nor Muritani uses intermediate results for recursive calculation of round keys in the claimed manner. Applicant addresses aspects of both references individually below.

Page 6 of the Office Action alleges that Matsui discloses "round key generation means" by referring to Matsui's address calculating circuit [Fig. 1: 23] and magnification key latch [7]. In particular, the Office Action alleges that Matsui's magnification key latch supplies a selected extended key that is equivalent to the recited external key input. However, Applicant respectfully submits that Matsui does not disclose, suggest, or teach a connection equivalent to the claimed "intermediate results" line between the control device and the round key generator. Thus, Matsui cannot perform the recited recursive calculation of round keys.

Applicant respectfully submits that Muritani displays similar deficiencies. While page 7 of the Office Action alleges that Muritani discloses an expanded common key as the recited initial key, Muritani does not disclose, suggest, or teach anything that is analogous to the claimed "intermediate results" connection coupling the round key generator to the control device. Muritani clearly cannot recursively calculate round keys in the claimed manner.

As Matsui in view of Muritani lacks the recited subject matter, Applicant respectfully submits that claims 1 and 11 are allowable over those references.

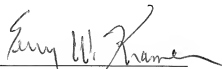
Claims 2-10 depend from independent claim 1 and claims 12-17 depend from independent claim 11. Thus, these claims are allowable at least on the basis of their respective dependencies from allowable claims. Hennessy, Tran, and Verbauwhede fail to remedy the deficiencies of Matsui in view of Muritani described above in connection with the rejection of claims 1 and 11. Thus, Applicant respectfully submits that dependent claims 2-10 and 12-17 are allowable.

For at least the reasons listed above, Applicant respectfully requests that the rejections of claims 1-17 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the remarks above, Applicant believes that each of the rejections/objections has been overcome and the application is in condition for allowance. In the event that the fees submitted prove to be insufficient in connection with the filing of this paper, please charge our Deposit Account Number 50-0578 and please credit any excess fees to such Deposit Account. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the attorney overseeing the application file, David Cordeiro, of NXP Corporation at (408) 474-9057.

Respectfully submitted,
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